



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,709	05/31/2001	Young-jin Song	Q64254	6220

7590 02/06/2004  
SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
WASHINGTON, DC 20037-3213

EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT PAPER NUMBER

2828

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/867,709

Applicant(s)

SONG ET AL.

Examiner

Armando Rodriguez

Art Unit

2828

AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

Paul Sp  
SPB 2/28

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

The 35 USC 112 second paragraph rejection of claims 1-13 has been withdrawn based on applicant's amendment.

The double patenting warning of claims 4 and 10 has been withdrawn based on applicant's arguments filed June 12, 2003.

Applicant's arguments filed December 3, 2003 pertaining to the 35 USC 103 rejections have been fully considered but they are not persuasive.

Applicant's arguments on page 8 pertain to column 3 lines 57-65 and column 4 line 58 to column 5 line 2 of the Thornton reference, which describes how the different wavelengths of the semiconductor laser are selected. Applicant has amended claims 1,6,13 to recite a limitation of selecting a resonance wavelength; thereby the Thornton reference does disclose selection of wavelengths. Applicant's arguments on pages 8 and 9 pertain to column 4 line 58 to column 5 line 2 of the Thornton reference, where applicant's discusses Thornton does not teach or suggest adjusting the thickness of the mirrors, however Thornton discloses adjustment of the mirrors to be optimal at the respective wavelengths, which are the selected wavelengths thereby Thornton implies controlling the optimal output of the wavelength by adjustment of the mirrors. Figure 3 illustrates the mirrors having different thickness for optimizing the selected wavelength. Furthermore, applicant does not claim that the thickness of the dielectric reflection layer selects the wavelengths but that it is suitable for a selected wavelength and fails to claim, how the wavelength is selected.

Applicant's arguments on page 9 pertaining to Thornton disclosing the opposite are irrelevant because Thornton is discussing a different embodiment for obtaining a single wavelength.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1,6 and 13,

It is not clear within the claim language, how the wavelength is selected.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli (PN 5,699,375) in view of Thornton (PN 5,319,655) and Coman et al (PN 6,320,206).

Regarding claims 1,5,6,9,11,12 and 13,

Figure 1 of Paoli illustrates, a multiple wavelength laser system having plural laser units with a substrate (102), a DBR (104) having alternating layers which provide reflection, an active region (108), an intermediate region (114), top contact layers (160,162) and a top DBR with alternating layers which provide reflection. Paoli illustrates in figure 1 and discloses in column 4 line 64 obtaining different by adjusting the spacer (118).

Paoli does not disclose obtaining different wavelengths by adjusting the DBR.

Thornton illustrates in figure 3 and discloses in column 4 line 64 through column 5 line 2, obtaining different wavelength by adjusting the DBR, called mirrors in the reference.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to apply the teachings of Thornton in the laser system of Paoli because the adjustment in the thickness of the DBR will provide different wavelengths.

Regarding claims 2-4,7,8 and 10,

Paoli does not disclose using the particular dielectric alternating materials as claimed in the invention.

Coman et al discloses in column 4 lines 9-15 that such materials as silicon dioxide, titanium oxide and zirconium oxide are used in DBR alternating layers to provide a low index of refraction and a high index of refraction layers.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use any of the known dielectric materials to form DBR of alternating layers within the semiconductor lasers.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is 571-272-1952. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 571-272-1941. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2828

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Armando Rodriguez  
Examiner  
Art Unit 2828

  
Paul Ip  
Supervisor  
Art Unit 2828

AR/PI